

ENVIRONMENTALLY FRIENDLY DISPOSABLE HYGIENIC PRODUCT

BACKGROUND OF THE INVENTION

5 The present invention relates to a hygienic product,
and more particularly to a disposable hygienic product
that includes plastic materials having proper
percentages of calcium carbonate and being mechanically
formed into shape, so that the hygienic product has
10 fully burnable EVA web and backing plastic sheet and
is therefore environmentally friendly.

There are various disposable hygienic products,
including diapers and pants-shaped diapers for infants,
15 old people and patients, paper pants, and sanitary
napkins and pads for women, being widely used in our
daily life. These products are constantly modified to
improve their functions and material quality. For this
purpose, it is inevitable to add many plastic materials
20 to the originally included natural materials. These
plastic materials, when being burned, produce colloidal
materials that stick to inner wall surfaces of an
incinerator to reduce the usable life of the incinerator.
Thus, it is necessary to periodically clean the
25 colloidal materials from the inner wall surface of the
incinerator. As a matter of fact, it is difficult to
clean the colloidal materials. The existing
disposable hygienic products therefore form a big

problem in the environment protection.

SUMMARY OF THE INVENTION

5 It is therefore a primary object of the present invention
to provide an environmentally friendly disposable
hygienic product that includes fully burnable natural
and plastic materials. The disposable hygienic
product of the present invention could be burned into
10 powder that is not combustion supporting and does not
stick to the inner wall surfaces of the incinerator.
Costs for cleaning the inner wall surfaces of
incinerator can therefore be saved while the
incinerator could have prolonged service time and life
15 without producing large amount of black smoke and toxic
gases during incinerating.

Another object of the present invention is to provide
an environmentally friendly disposable hygienic
20 product that includes plastic materials that could be
easily treated and processed to form the hygienic
product and is therefore cost effective.

BRIEF DESCRIPTION OF THE DRAWINGS

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The structure and the technical means adopted by the
present invention to achieve the above and other objects
can be best understood by referring to the following

detailed description of the preferred embodiments and the accompanying drawings, wherein

Fig. 1 is a perspective view of a sanitary napkin according to a first embodiment of the present invention, apart of which is separated to show an internal structure thereof;

Fig. 2 is an enlarged sectional view of the sanitary napkin of Fig. 1; and

Fig. 3 is a perspective view of a pants-shaped disposable diaper according to a second embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

There are various commercially available hygienic products of different brands and designs, including sanitary napkins and pads for women, disposable diapers for babies, disposable diapers for old people and patients, etc. These hygienic products structurally includes three parts, namely, a surface layer usually made of non-woven cloth and EVA web, an absorbent layer usually made of pulp and high molecular polymer, and a back layer usually made of a plastic material. Figs. 1 and 2 are perspective and enlarged sectional views, respectively, of a disposable sanitary napkin

according to a first embodiment of the present invention.

The sanitary napkin 10 is usually attached to an inner
5 side of a waterproof plastic wrapper 20 via an adhesive
strip 18 applied on a backside of the sanitary napkin
10, and then folded and packed in the wrapper 20. To
use the sanitary napkin 10, simply tear open the wrapper
20 and remove the sanitary napkin 10, extend and attach
10 the sanitary napkin 10 to a crotch of user's underwear
(not shown) by means of the adhesive strip 18.

Each piece of the sanitary napkin 10 includes at least
an EVA web 12, which has been widely adopted by about
15 65% to 70% of existing sanitary napkin manufacturers
to replace the non-woven cloth as the surface layer
of sanitary napkin. The EVA web 12 provides comfortable
touch and includes a plurality of tiny holes that allow
menstrual blood to quickly pass through the surface
20 layer and enter the absorbent layer to keep a contact
surface between the user's body and the sanitary napkin
10 dry and comfortable.

Portions of the sanitary napkin 10 sequentially located
25 below the EVA web 12 are high molecular absorbent 16
having a predetermined thickness and backing plastic
sheet 14. The high molecular absorbent 16 is located
between the EVA web 12 and the backing plastic sheet

14 and is an important part having influence on the performance of the sanitary napkin 10. The high molecular absorbent 16 mainly consists of pulp and high molecular polymer that is a plastic material. This type of material absorbs liquid and expands to hold the absorbed liquid. Menstrual blood could be "locked" in the high molecular polymer without causing an overflowed absorbent layer. The backing plastic sheet 14 is a thin and watertight plastic film capable of isolating and preventing liquid from penetrating therethrough. Most sanitary napkins 10 have a back layer formed of the backing plastic sheet 14 in order to be watertight. To prevent the sanitary napkin 10 from moving relative to the user's underwear, adhesive 18 is provided at an outer surface of the backing plastic sheet 14, so that the entire sanitary napkin 10 is adhesively attached to the crotch of the user's underwear. In most cases, the adhesive 18 is provided in the form of a long and wide strip. In other cases, the adhesive 18 may be in the form of spots or multiple narrow strips (not shown). It is also possible for the backing plastic sheet 14 and the wrapper 20 to be integrally formed at the same time, so that the sanitary napkin 10 is more convenient and comfortable for use.

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Please refer to Fig. 3 that is a perspective view of a pants-shaped disposable diaper 22 according to a second embodiment of the present invention and suitable

for babies, and adults and patients suffering from incontinence. Generally, a conventional disposable diaper is used with a waterproof wrap, while a pants-shaped disposable diaper 22 serves as a whole piece of underwear. The pants-shaped disposable diaper 22 is mainly formed from a large amount of high molecular absorbent 24 and possesses extremely high absorbing ability. The pants-shaped disposable diaper 22 is designed for snugly fitting on a wearer and includes a diaper portion having locating adhesive strips 28 provided at two lateral sides and comfortable hems provided at crotch holes (not shown). Leakproof ruffles 30 are provided along two crotch holes of the pants-shaped disposable diaper 22 to prevent an overflowed diaper even at a large amount of urine. Repeatedly useable adhesive areas 26 are provided at two lateral sides of the diaper 22 closely below a waist portion thereof. By attaching the locating adhesive strips 28 to the repeatedly usable adhesive areas 26, the pants-shaped disposable diaper 22 could be adjustably fitted to the wearer's waist. The entire diaper 22 is coated with a backing plastic layer 32. Some pants-shaped disposable diapers 22 are even featured with wet indicating means, highly absorbent and highly air-permeable material, etc.

For the disposable hygienic products of the present invention to be environmentally friendly, natural

materials that could be fully burned and the following plastic materials are used to manufacture different parts of the products:

- 5 1. Backing plastic sheet: This part consists of 40% EVA plastics, 10% LDPE (low density polyethylene), 2% stearic acid, 9% PE and wax, and 39% or more calcium carbonate. These materials are mixed and vacuum dried to a controlled temperature between 135°C and 10 220°C. The dried mixture is then rotatably extruded to produce pliable and dual-color backing plastic sheet that is environmentally friendly and fully burnable.
- 15 2. High molecular absorbent: This part consists of 35% natural wood fiber and 65% natural cotton that are mix-spun and then woven with a needle-bonded fabric (nonwovens) loom into highly loose wool, which is treated under high temperature to form a shaped high 20 molecular absorbent.
- 25 3. EVA web: This part consists of materials having the same types and percentages as those for the backing plastic sheet. The mixed materials are treated with an L-type calender having an embossed roller to produce an air-permeable EVA web that is fully burnable and therefore environmentally friendly.

In brief, the disposable hygienic product of the present invention includes natural and plastic materials that could be fully burned into powder that is not combustion supporting and does not stick to the inner wall surfaces of the incinerator. Costs for cleaning the inner wall surfaces of incinerator can therefore be saved while the incinerator could have prolonged service time and life without producing large amount of black smoke and toxic gases during incinerating.

The present invention has been described with a preferred embodiment thereof and it is understood that many changes and modifications in the described embodiment can be carried out without departing from the scope and the spirit of the invention that is intended to be limited only by the appended claims.